CLAIMS:

What is claimed is:

1. A method for loading a class, comprising:
    loading a class;
    inserting an immutability flag into the class;
    determining whether the class is immutable; and
    setting the immutability flag if the class is
immutable.

2. The method of claim 1, wherein the step of
determining whether the class is immutable comprises:
    parsing the bytecode of the class.

3. The method of claim 2, wherein the step of
determining whether the class is immutable further
comprises:
    determining whether the class can be modified after
it is created.

4. The method of claim 3, wherein the step of
determining whether the class can be modified comprises
determining whether all properties of the object are
marked private.

5. The method of claim 3, wherein the step of
determining whether the class can be modified comprises
determining whether there are any non-private methods
that update properties of the class.

6. The method of claim 1, further comprising:
    receiving a request to invoke a server application;
    examining an argument in the request;
    if the argument is an object, determining whether
the object is immutable; and
    if the object is immutable, passing a reference to
the object rather than a clone of the object.

7. The method of claim 6, wherein the step of
determining whether the object is immutable comprises:
    determining whether an immutability flag for the
object is set.

8. A method for invoking an object, comprising:
    receiving a request to invoke an object;
    examining an argument in the request;
    if the argument is an object, determining whether
the object is immutable; and
    if the object is immutable, passing a reference to
the object rather than a clone of the object.

9. The method of claim 8, wherein the step of
determining whether the object is immutable comprises:
    determining whether an immutability flag for the
object is set.

10. The method of claim 8, further comprising:
    if the object is not immutable, passing a clone of

3   the object as the argument.

1   11. An apparatus for loading a class, comprising:
2   loading means for loading a class;
3   insertion means for inserting an immutability flag
4   into the class;
5   first determination means for determining whether
6   the class is immutable; and
7   setting means for setting the immutability flag if
8   the class is immutable.

1   12. The apparatus of claim 11, wherein the first
2   determination means comprises:
3   parsing means for parsing the bytecode of the class.

1   13. The apparatus of claim 12, wherein the first
2   determination means further comprises:
3   second determination means for determining whether
4   the class can be modified after it is created.

1   14. The apparatus of claim 13, wherein the second
2   determination means comprises means for determining
3   whether all properties of the object are marked private.

1   15. The apparatus of claim 13, wherein the second
2   determination means comprises means for determining
3   whether there are any non-private methods that update
4   properties of the class.

1   16.   The apparatus of claim 11, further comprising:

2   receipt means for receiving a request to invoke a

3   server application;

4   examination means for examining an argument in the

5   request;

6   third determination means for determining whether

7   the object is immutable if the argument is an object; and

8   reference means for passing a reference to the

9   object rather than a clone of the object if the object is

10   immutable.

1   17.   The apparatus of claim 16, wherein the third

2   determination means comprises:

3   means for determining whether an immutability flag

4   for the object is set.

1   18.   An apparatus for invoking an object, comprising:

2   receipt means for receiving a request to invoke an

3   object;

4   examination means for examining an argument in the

5   request;

6   determination means for determining whether the

7   object is immutable if the argument is an object; and

8   reference means for passing a reference to the

9   object rather than a clone of the object if the object is

10   immutable.

1   19.   The apparatus of claim 18, wherein the determination

2   means comprises:

3   means for determining whether an immutability flag

4 for the object is set.

5 20. The apparatus of claim 18, further comprising:

6   clone means for passing a clone of the object as the

7 argument if the object is not immutable.

1 21. A computer program product, in a computer readable

2 medium, for loading a class, comprising:

3   instructions for loading a class;

4   instructions for inserting an immutability flag into

5 the class;

6   instructions for determining whether the class is

7 immutable; and

8   instructions for setting the immutability flag if

9 the class is immutable.

1 22. A computer program product, in a computer readable

2 medium, for invoking an object, comprising:

3   instructions for receiving a request to invoke an

4 object;

5   instructions for examining an argument in the

6 request;

7   instructions for determining whether the object is

8 immutable if the argument is an object; and

9   instructions for passing a reference to the object

10 rather than a clone of the object if the object is

11 immutable.